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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,409	06/24/2005	Orlando Miguel Pires Dos Reis Moreira	NL02 1385 US	4233

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EXAMINER	
FONG, VINCENT	
ART UNIT	**PAPER NUMBER**
2183	

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06/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/540,409	PIRES DOS REIS MOREIRA ET AL.	
	Examiner	Art Unit	
	Vincent Fong	2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the amendment filed on 3-12-2007.

Claims 1 and 5 have been amended.

Claims 1-11 are rejected.

Claims 1-11 are pending and have been examined.

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-11 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7 of copending Application No. 10/540702. Although the conflicting claims are not identical, they are not patentably distinct from each other because both discloses a clustered instruction level parallelism

processor comprising clusters with register file and functional unit, segmented bus to connect the clusters and switches to connect and disconnect adjacent segments.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3,5,6 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wertheim et al. (WO 01/73566 A2, hereinafter Wertheim) in view of applicants' admitted prior art.

As per claim 1, Wertheim discloses:

A processor with a plurality of clusters (functional block, lines 19-23); a bus means for connecting said clusters (element 120 in figure 2), said bus means comprising a plurality of bus segments(element 134,132,142,152 in figure 2) , and switching means (element 130, 140, 150 in figure 2) arranged between adjacent bus segments, for connecting or disconnecting adjacent bus segments (page 5 lines 24-28).

Wertheim does not disclose cluster comprising at least one register file and at least one functional unit and a processor being a clustered instruction level parallelism processor.

However, applicants' admitted prior art discloses clusters each comprising at least one register file and at least one functional unit (page 1 lines18-19) and a processor being a clustered instruction level parallelism processor (page 1 lines17-19).
It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have make the necessary modification on Wertheim inventions to incorporate applicants' admitted prior art. One of ordinary skill in the art would be motivated to avoid long wires in the system which has a negative impact in latency (page 1 line 14-16).

As per claim 2, rejection of claim 1 is incorporated and Wertheim further discloses: each cluster is coupled to at least one bus segment (figure 2).

As per claim 3, rejection of claim 1 is incorporated and Wertheim further discloses: two or more clusters (element 118, 116 in figure 2) are coupled to the same bus segment (element 152 in figure 2).

As per claim 5, Wertheim discloses:
Method for accessing a bus in a processor, wherein the bus (element 120 in figure 2) comprises at least one switching means (element 130, 140, 150 in figure 2) along said bus, comprising the steps of: performing a sending operation based on a source register (source of bus transaction) and a transfer word (source- destination pair and required

states of switches), opening/closing said switching means according to said transfer word (page 7 lines 4-24).

Wertheim does not disclose a processor being a clustered instruction level parallelism processor.

However, applicants' admitted prior art discloses a processor being a clustered instruction level parallelism processor (page 1 lines17-19).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have make the necessary modification on Wertheim inventions to incorporate applicants' admitted prior art. One of ordinary skill in the art would be motivated to avoid long wires in the system which has a negative impact in latency (page 1 line 14-16).

As per claim 6, rejection of claim 5 is incorporated and Wertheim further discloses: said transfer word (source- destination pair and required states of switches) represents the sending direction for the sending operation and the receiving direction for the receiving operation (page 7 lines 4-18), the transfer word indicates the path from source and the destination therefore the direction of operation is inherently represented by the transfer word.

As per claim 9, rejection of claim 6 is incorporated and Wertheim further discloses: said sending direction or said receiving direction is left, right or all (figure 4,page 6 line 31 to page 7 line 2), from element 212 the sending direction is left when switch 240 is

closed and switch 244 is open, the sending direction is right when switch 244 is closed and switch 240 is open and the sending direction is all when both switches are closed.

As per claim 10, rejection of claim 9 is incorporated and Wertheim further discloses: wherein no switching means is opened, if said sending direction or receiving direction is all (figure 4).

As per claim 11, rejection of claim 5 is incorporated and Wertheim further discloses: said transfer word (source- destination pair and required states of switches)represents a switch configuration word (required states of switches), wherein said switching means are opened or closed according to said configuration word (page 7 lines 4-24).

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wertheim in view of applicants' admitted prior art further in view of Tsuruta et al. (US PG PUB 2001/0054124, hereinafter Tsuruta).

As per claim 4, rejection of claim 1 is incorporated and the combination of Wertheim and applicants' admitted prior art disclose claim 1.

Neither Wertheim nor applicants' admitted prior art disclose said bus means is a multi-bus comprising at least two busses.

However Tsuruta discloses said bus means is a multi-bus (parallel bus) comprising at least two busses (figure 6).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have make the necessary modification on the combination of Wertheim applicants' admitted prior art to incorporate Tsuruta's invention. One of ordinary skill in the art would be motivated to provide a network with connection format of optimal cost and technicality (paragraph 0014).

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wertheim in view of applicants' admitted prior art further in view of the article "Resource allocation in a dynamically partitionable bus network using a graph coloring algorithm" authored by Woo et al. (hereinafter Woo).

As per claim 7, rejection of claim 6 is incorporated and the combination of Wertheim and applicants' admitted prior art disclose the limitations of claim 6.
Neither Wertheim nor applicants' admitted prior art disclose the default state of said switching means is closed.
However Woo discloses the default state of said switching means is closed (page 1798 column 2 paragraph 5).
It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have make the necessary modification on he combination of Wertheim applicants' admitted prior art to incorporate Woo's invention. One of ordinary skill in the art would be motivated to maximize the parallel communication (page 1794 column 2 paragraph 2).

As per claim 8, rejection of claim 7 is incorporated and Wertheim further discloses: the one of said switching means (element 140), which is closest to a cluster (element 110) performing said sending operation or said receiving operation in the direction opposite of said sending or said receiving direction, is opened (page 6 lines 12-16).

Response to Arguments

1. Applicant's arguments filed 03-12-2007 have been fully considered but they are not persuasive. In remarks, the applicant argues in substance:

(1) Applicant argue that applicant's admitted prior art nor Wertheim teach, suggest or provide motivation for applicants' claimed invention. As the claimed invention is directed to a "cluster instruction level parallelism processor" and at problems of latency and scalability; while Wertheim is not directed to a "cluster instruction level parallelism processor" and is directed at problem of power consumption.

Response

The fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Fong whose telephone number is 571-270-1409. The examiner can normally be reached on 7:00-3:30 Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on 571-272-4162. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

EDDIE CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VF
Vincent Fong
May 26 2007